

REMARKS

Claims 1-14, 18, 19, 27, 28, 32 and 34-41 remain in this application. Claims 9 and 39-41 are indicated as containing allowable subject matter. Applicant respectfully requests reconsideration.

The office action noted that certain copies of the listed Japanese patents or patent publications have not been provided. Applicant submits herewith copies of the two Japanese patents with English translations which were not of record in the parent application, U.S. Serial No. 09/868,354.

The office action noted the requirements for making specific reference to prior applications from which priority is being claimed. Applicant brings to the examiner's attention that in the Preliminary Amendment of July 16, 2003, filed with the present divisional application, Applicant requested that the following paragraph be added before the first paragraph beginning on page 1: "This a divisional application of U.S. Serial No. 09/868,354 filed on June 15, 2001." If this reference to the prior application is insufficient for any reason, Applicant would be pleased to supplement the statement.

Claims 1, 2, 12, 13, 19 and 27 were rejected under 35 U.S.C. § 102(b) as being anticipated by *Murai et al.* (JP 10-302645). Applicant respectfully traverses.

The present invention is directed to a gas discharge panel that provides accurate color display and a novel and easy method of manufacture.

Claim 1 is directed to a gas discharge panel that displays a color image by selectively illuminating a plurality of discharge cells. The gas discharge panel has a plurality of phosphor layers formed by baking a phosphor film on a first substrate facing the discharging cells. A plurality of gap members are disposed at locations corresponding to boundary areas between the

first and second substrates. These gap members accurately determine the interval between the first and second substrates without requiring the use of barrier ribs between the substrates. The specification describes the gap members as having a particular shape, such as spherical or rod-shaped, which does not change during the process of panel production. The gap members do not deform as a paste material would. The claim recitation “a plurality of gap members of a given shape . . .” is referring to the gap members described in the specification. Furthermore, since the gap members are not placed in the center areas of the discharge cells, the gap members do not hinder discharge, thereby preventing the occurrences of discharge failure.

The claimed structure is easier and less costly to manufacture and results in a much higher precision image display than heretofore possible. Forming the phosphor layer by baking a phosphor film greatly simplifies the method of manufacture of the gas discharge panel.

The *Murai* reference, on the other hand, teaches the use of metallic material to form a barrier rib between the first and second substrates, in order to increase the mechanical strength of the resulting gas discharge panel. *Murai* does not concern himself with, nor does he contemplate, the use of gap members to define the interval between the first and second substrates.

With respect to claim 19, a phosphor layer corresponding to an illumination color of each discharge cell is formed on a first substrate. Gap members of a given shape are disposed at locations on the first substrate or the second substrate corresponding to boundaries between discharge cells, and the first and second substrates are joined after the gap members have been applied to one of the substrates. The result of this process is that the interval or gap between the first and second substrates is accurately defined by these gap members without requiring the forming of barrier ribs between the substrates. The process of claim 19 provides a simplified and

easier manufacturing process for the production of gas discharge panels than has been heretofore possible.

The *Murai* reference teaches the use of metallic material to form barrier ribs in order to separate the first and second substrates and increase the mechanical strength of the resulting gas discharge panel. *Murai* is not concerned and does not contemplate the use of gap members without forming barrier ribs.

The elements 11 of *Murai* are not gap members as disclosed in the present application.

Applicant respectfully requests that this rejection be withdrawn.

Claims 1-4, 12-14, 18, 19 and 32 were rejected under 35 U.S.C. § 102(b) as anticipated by *Amemiya et al.* (US 5,742,122). Applicant respectfully traverses.

The *Amemiya* reference is concerned with thickening the dielectric layer except at locations corresponding to the discharge gap. The elements 31 of *Amemiya* are not gap members as disclosed in the present application.

With respect to claim 32, a method for producing a gas discharge panel requires an electrode forming process for forming electrodes on a first substrate by applying a dielectric element material, to cover the electrodes, the dielectric element material containing gap members. By placing the gap members in the dielectric element material and distributing the gap members concurrently with the dielectric layer on the first substrate, the gas discharge panel is produced more easily and simply.

All the plasma display panels described in the prior art such as *Murai*, *Amemiya* and *Aoki* (US 6,369,501) utilize a phosphor layer formed on the substrate that extends up the surface of the barrier ribs. Each phosphor layer, therefore, defines a bowl-like profile in cross-section as can be clearly seen in Figure 7 of *Aoki*. All the phosphor layers in the cited prior art are formed by

applying a phosphor ink between barrier ribs on the substrate, followed by baking. This process can't possibly provide a plurality of phosphor layers formed by baking of phosphor film and provided on the first substrate facing the discharge cells, each phosphor layer corresponding to an illumination color of the discharge cell. Furthermore, the plasma display devices of the references cannot be manufactured according to the method recited in claim 19, specifically, by disposing gap members after forming a phosphor layer, or as recited in claim 32, applying a dielectric element material to cover the electrodes, which dielectric element material contains gap members.

Applicant respectfully requests that this rejection be withdrawn.

Claims 1, 8, 10 and 18 were rejected under 35 U.S.C. § 102(e) as anticipated by *Aoki*. Applicant respectfully traverses.

The *Aoki* reference is concerned with an improved method of applying fluorescent material and discloses the forming of a phosphor layer by ejecting a phosphor paste from a nozzle between the barrier ribs, thereby forming phosphor layers with high accuracy and at a low cost. *Aoki* simply does not disclose the use of gap members. The members 17 of *Aoki* are partition walls which are hardly the gap members of the present invention.

Applicant respectfully requests that this rejection is withdrawn.

Claim 32 was rejected under 35 U.S.C. § 102(e) as unpatentable over *Kanagu et al.* (US 6,538,380). Applicant respectfully traverses.

Kanagu discloses the use of a back substrate where the central section projects forward relative to the periphery. *Kanagu* claims this structure reduces the occurrence of crosstalk by eliminating the gap between the top surface of the barrier ribs and the inner surface of the substrate.

Kanagu, like the other prior art of record, has a phosphor layer that has a bowl-like profile in cross-section. *Kanagu* does not apply a dielectric element material containing gap members to cover the electrodes.

Applicant respectfully requests that this rejection be withdrawn.

Claims 1, 12-14 and 19 were rejected under 35 U.S.C. § 103(a) as unpatentable over Applicant's admission of prior art. Applicant respectfully traverses.

The surface discharge-type panel illustrated in Figure 15 of the application as prior art hardly discloses the gap members of the present invention. Nor does Figure 15 describe a process of making a gas discharge panel that disposes gap members of a given shape at locations on the first substrate or the second substrate corresponding to boundaries between discharge cells.

Owing to the claimed "gap members of a given shape", the present invention achieves the effect that "the interval between the first and second substrates is accurately determined". This effect is not achieved by any of the *Murai*, *Amemiya*, *Aoki*, and *Kanagu* references.

In the PDPs taught in the *Murai*, *Amemiya*, *Aoki*, and *Kanagu* references, as well as in the other prior art of record, the phosphor layers are each formed so as to cover not only the surface of the substrate of record but also the surface of the barrier rib(s). That is, these prior art PDPs lack the feature recited in claim 1: "a plurality of gap members of a given shape are disposed at locations corresponding to boundary areas between and excluding the center areas of the discharge cells".

Furthermore, these prior art PDPs cannot be manufactured by distributing the gap members after the phosphor layer is formed, as in the method recited in claim 19. None of the

prior art references of record teach or contemplate applying a dielectric element material containing gap members, as recited in claim 32.

The PDPs taught in the cited references cannot be manufactured as easily as the gas discharge panel manufactured according to the steps of claims 1, 19, and 32 of the present application.

In light of the above, the invention recited in claims 1, 19, and 32 of the present application have features not disclosed in any of the cited references, and achieve effects not achieved by any of the cited references. Thus, the subject matters of claims 1, 19, and 32 are seen as not obvious over the prior art.

Applicant respectfully requests that this rejection be withdrawn.

Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Murai et al.* in view of *Ha et al.* (6,252,353). Applicant respectfully traverses.

Claim 5 depends from claim 2, which depends from claim 1. The above arguments made on behalf of the patentability of claim 1 over *Murai* are reasserted here. Applicant respectfully requests that this rejection be withdrawn.

Claim 6 was rejected under 35 U.S.C. § 103(a) as unpatentable over *Amemiya* in view of *Yoshioka* (JP 03-233829). Applicant respectfully traverses.

Claim 6 depends from claim 2, which depends from claim 1. The above arguments on behalf of the patentability of claim 1 over *Amemiya* are reasserted here. Applicant respectfully requests that this rejection be withdrawn.

Claims 7 and 35 were rejected under 35 U.S.C. § 103(a) as unpatentable over *Murai et al.* in view of *Osawa et al.* (US 5,892,492). Applicant respectfully traverses.

Claim 7 depends from claim 1. Claim 35 depends from claim 2, which depends from claim 1. Applicant reasserts here the arguments made above in favor of the patentability of claim 1 over *Murai et al.* Applicant respectfully requests that this rejection be withdrawn.

Claims 7 and 35-37 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Amemiya* in view of *Osawa* (5,892,492). Applicant respectfully traverses.

Applicant reasserts here the argument made above in favor of the patentability of claim 1 over *Amemiya*. Applicant respectfully requests that this rejection be withdrawn.

Claim 18 was rejected under 35 U.S.C. § 103(a) as unpatentable over *Murai* in view of *Amemiya*. Applicant respectfully traverses.. Claim 18 depends from claim 1. Applicant reasserts the arguments made in favor of patentability of claim 1 over *Murai*. Applicant respectfully requests that this rejection be withdrawn.

Claim 18 was rejected under 35 U.S.C. § 103(a) as unpatentable over Applicant's admission of prior art and further in view of *Amemiya*. Applicant respectfully traverses. Claim 18 depends from claim 1. Figure 15 of the current application hardly discloses the structure recited in claim 1, as noted above. Applicant respectfully requests that this rejection be withdrawn.

Claims 19, 27, 28 and 34 were rejected under 35 U.S.C. § 103(a) as unpatentable over *Miyahara* (JP 01-183029) in view of *Murai et al.* Applicant respectfully traverses.

Neither *Miyahara* or *Murai et al.*, as noted above, discloses a method of producing a gas discharge panel which disposes gap members of a given shape at locations on the first substrate or the second substrate corresponding to boundaries between discharge cells claimed and disclosed in the present invention.

Applicant respectfully requests that this rejection be withdrawn.

Claim 38 was rejected under 35 U.S.C. § 103(a) as unpatentable over *Murai et al.* in view of *Ha et al.* (6,252,353) and further in view of *Osawa*. Applicant respectfully traverses.

Claim 38 depends from claim 5, which depends from claim 2, which depends from claim 1. Applicant reasserts here the arguments set forth above in favor of the patentability of claim 1 over *Murai et al.* Applicant respectfully requests that this rejection be withdrawn.

Applicant notes with appreciation the indication of allowable subject matter in claims 9 and 39-41.

In light of the above amendment and remarks, Applicant believes that all the claims in the application are in condition for allowance and respectfully requests that this application be passed to issue.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on December 21, 2004.

By: Rachel Carter

Rachel Carter

Signature

Dated: December 21, 2004

Respectfully submitted,

SNELL & WILMER L.L.P.



Albin H. Gess
Registration No. 25,726
1920 Main Street, Suite 1200
Irvine, California 92614-7230
Telephone: (949) 253-2720